REMARKS

Claims 1-18 are pending in the present application. No claims were cancelled or added. Claims 1, 2, 5 – 7, 10, 11, and 14 – 16 were amended. Reconsideration of the claims is respectfully requested.

Support for the amendments to claims 1, 2, 5 – 7, 10, 11, and 14 – 16 may be found in the Specification on page 10, line 13 through page 12, line 9; Figures 5-8 and page 5, line 10 through page 8, line 9 and Figure 1.

I. 35 U.S.C. § 112, Second Paragraph, claims 1 and 10

The Office Action rejects claims 1 and 10 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which Applicants regard as the invention. This rejection is respectfully traversed.

The Office Action specifically objects to the phrase "to form a new translated command different from the command" on lines 6 and 7 of each claim. Applicants have amended the language to recite "translating the command from an InfinBand host system command to a command for the device with an internal InfiniBand bus structure to form a translated command, and sending the translated command to the device with an internal InfiniBand bus structure."

The new language fully satisfies the requirements of 35 U.S.C. § 112, second paragraph and Applicants respectfully request that the rejection of claims 1 and 10 under 35 U.S.C. § 112, second paragraph be withdrawn.

II. 35 U.S.C. § 103, Obviousness, claims 1, 5, 7, 10, 14, and 16

The Office Action rejects claims 1, 5, 7, 10, 14, and 16 under 35 U.S.C. § 103 as being unpatentable over Reshef et al. (U.S. 6,321,337 B1) hereinafter referred to as Reshef in view of Perlman et al. (U.S. 5,309,437) hereinafter referred to as Perlman. This rejection is respectfully traversed.

As to claims 1, 5, 7, 10, 14, and 16, the Office Action states:

> a. As per claims 1 and 10, Reshef teaches: presetting buffers in an internal subnet, wherein the buffers route external commands to a plurality of devices within the internal subnet (lines 19-45 of column 16); receiving a command from an external subnet to the internal subnet (lines 44-60 of column

6); translating the command to form a new translated command different from the command, and sending the new translated command to an internal device within the internal subnet, as determined by the buffers (lines 9-18 of column 13); and performing the new translated command within the internal subnet (lines 19-26 of column 13).

Reshef does not explicitly teach: the internal subnet appears as a single device to the external subnet. However, Perlman discloses: "From outside the extended network, there appears to be just a single network, i.e. there is one network identifier in the network layer address, and messages destined for a host computer within the extended network are addressed as if this were the case," (lines 58-63 of column 4). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the internal subnet appear as a single device to the external subnet. "The need for an alternative to bridges and routers is particularly critical in an "extended network" administered by a single institution. For example, a corporation or a university may have the need to configure a number of "subnets" or "network segments" that are interconnected into one extended network," (lines 53-58 of column 4 in Perlman). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the internal subnet appear as a single device to the external subnet in the system as taught by Reshef.

Office Action dated July 21, 2005, pp. 3-4.

b. As per claims 5 and 14, Reshef teaches: initiating a translation mapping for an internal subnet, wherein the translation mapping associates external command addresses with internal device addresses (line 60 of column 3 through line 3 of column 4); receiving a command from an external subnet to the internal subnet (lines 44-60 of column 6); translating the command address and sending the command to an internal device address of the internal subnet, as determined by the translation mapping (lines 59-61 of column 1 and lines 9-18 of column 13); and performing the command (lines 19-26 of column 13).

Reshef does not explicitly teach: the internal subnet appears as a single device to the external subnet, as each of a plurality of devices within the internal subnet are accessed by the external subnet using a same network address. However, Perlman discloses: "From outside the extended network, there appears to be just a single network, i.e. there is one network identifier in the network layer address, and messages destined for a host computer within the extended network are addressed as if this were the case," (lines 58-63 of column 4). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the internal subnet appear as a single device to the external subnet, as each of a plurality of devices within the internal subnet are accessed by the external subnet using a same network address. 'The need for an alternative to bridges and routers is particularly critical in an "extended network" administered by a single institution. For example, a corporation or a university may have the need to configure a number of "subnets" or "network segments" that are interconnected into one extended network," (lines 53-58 of column 4 in Perlman).

> It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the internal subnet appear as a single device to the external subnet, as each of a plurality of devices within the internal subnet are accessed by the external subnet using a same network address in the system as taught by Reshef.

Office Action dated July 21, 2005, pp. 4-5.

A fundamental notion of patent law is the concept that invention lies in the new combination of old elements. Therefore, a rule that every invention could be rejected as obvious by merely locating each element of the invention in the prior art and combining the references to formulate an obviousness rejection is inconsistent with the very nature of "invention." Consequently, a rule exists that a combination of references made to establish a *prima facie* case of obviousness must be supported by some teaching, suggestion, or incentive contained in the prior art which would have led one of ordinary skill in the art to make the claimed invention.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). When comparing Reshef to the claimed invention, the claim limitations of the presently claimed invention may not be ignored in an obviousness determination.

Amended independent claim 1 of the present invention, which is representative of amended independent claim 10 with regard to similarly recited subject matter, recites:

> 1. A computer implemented method for facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure, the method comprising:
>
> preposting command buffers to an InfiniBand isolation bridge, wherein the buffers contain external small computer system interface commands;
>
> receiving a command from the InfiniBand host system;
>
> translating the command from an InfinBand host system command to a command for the device with an internal InfiniBand bus structure to form a translated command, and sending the translated command to the device with an internal InfiniBand bus structure; and
>
> performing the translated command.

Reshef does not teach or suggest the features recited in claim 1. Claim 1 is directed towards facilitating communication between an InfiniBand host system and a device with an

internal InfiniBand bus structure. Claim 1 utilizes an InfiniBand isolation bridge. Reshef does not teach an InfiniBand host system, a device with an internal InfiniBand bus structure, an InfiniBand isolation bridge, or facilitating communication between the InfiniBand host system and the device with an internal InfiniBand bus structure. Instead, Reshef teaches a security gateway between an untrusted computer system and a trusted computer system that also converts received messages into a simplified form for the trusted computer system to use. Reshef does not teach any of the features recited in claim 1 including "preposting command buffers to an InfiniBand isolation bridge, wherein the buffers contain external small computer system interface commands;" "receiving a command from the InfiniBand host system;" "translating the command from an InfinBand host system command to a command for the device with an internal InfiniBand bus structure to form a translated command, and sending the translated command to the device with an internal InfiniBand bus structure;" or "performing the translated command."

Perlman does not cure the deficiencies of Reshef. Perlman does not teach the features missing from Reshef including "preposting command buffers to an InfiniBand isolation bridge, wherein the buffers contain external small computer system interface commands;" "receiving a command from the InfiniBand host system;" "translating the command from an InfinBand host system command to a command for the device with an internal InfiniBand bus structure to form a translated command, and sending the translated command to the device with an internal InfiniBand bus structure;" and "performing the translated command." Perlman does not teach an InfiniBand host system or a device with an internal InfiniBand bus structure, or facilitating communication between them. Instead, Perlman teaches a method and device for coupling segments of an extended local area network.

Amended independent claim 5 of the present invention, which is representative of amended independent claim 14 with regard to similarly recited subject matter, recites:

> 5. A computer implemented method for facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure, the method comprising:
>
> initiating a translation mapping to an InfiniBand translation bridge, wherein the translation mapping associates external command addresses with the device with an internal InfiniBand bus structure;
>
> receiving a command from the InfiniBand host system;
>
> translating a destination local identifier of the command to a destination local identifier for the device with an internal InfiniBand bus structure to form a

translated address and sending the command to the device with an internal InfiniBand bus structure associated with the translated address, as determined by the translation mapping; and

performing the command.

Reshef does not teach or suggest the features recited in claim 5. Claim 5 is directed towards facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure. Claim 5 utilizes an InfiniBand translation bridge bridge. Reshef does not teach an InfiniBand host system, a device with an internal InfiniBand bus structure, an InfiniBand translation bridge, or facilitating communication between the InfiniBand host system and the device with an internal InfiniBand bus structure. Instead, Reshef teaches a security gateway between an untrusted computer system and a trusted computer system that also converts received messages into a simplified form for the trusted computer system to use. Reshef does not teach any of the features recited in claim 5, including "initiating a translation mapping to an InfiniBand translation bridge, wherein the translation mapping associates external command addresses with the device with an internal InfiniBand bus structure;" "receiving a command from the InfiniBand host system;" "translating a destination local identifier of the command to a destination local identifier for the device with an internal InfiniBand bus structure to form a translated address and sending the command to the device with an internal InfiniBand bus structure associated with the translated address, as determined by the translation mapping;" or "performing the command."

Perlman does not cure the deficiencies of Reshef. Perlman does not teach the features missing from Reshef including "initiating a translation mapping to an InfiniBand translation bridge, wherein the translation mapping associates external command addresses with the device with an internal InfiniBand bus structure;" "receiving a command from the InfiniBand host system;" "translating a destination local identifier of the command to a destination local identifier for the device with an internal InfiniBand bus structure to form a translated address and sending the command to the device with an internal InfiniBand bus structure associated with the translated address, as determined by the translation mapping;" and "performing the command." Perlman does not teach an InfiniBand host system or a device with an internal InfiniBand bus structure, or facilitating communication between them. Instead, Perlman teaches a method and device for coupling segments of an extended local area network.

Therefore, for all the reasons set forth above, Applicants submit that neither Reshef, Perlman, nor the combination of Reshef in view of Perlman teaches the presently claimed invention as recited in claims 1, 5, 10, and 14. Claims 7 and 16 depend from independent claims 5 and 14. As such, Applicants submit that claims 7 and 16 are also patentable over the combination of the cited references, at least by virtue of their depending from an allowable claim.

Furthermore, claims 7 and 16 recite other additional combinations of features not suggested by the combination of the references. Claims 7 and 16 recite the feature of "sending a command completed message to the InfiniBand host system, wherein the message appears to originate from the InfiniBand translation bridge." Such a feature is not taught or suggested by the combination of Reshef in view of Perlman. As discussed above, neither Reshef, Perlman, nor the combination of Reshef in view of Perlman teaches an InfiniBand translation bridge. As such, it follows that neither Reshef, Perlman, nor the combination of Reshef in view of Perlman teaches or suggests the feature of "sending a command completed message to the InfiniBand host system, wherein the message appears to originate from the InfiniBand translation bridge."

Therefore, the rejection of claims 1, 5, 7, 10, 14, and 16 under 35 U.S.C. § 103 has been overcome.

III. 35 U.S.C. § 103, Obviousness, claims 2, 4, 8, 11, 13, and 17

The Office Action rejects claims 2, 4, 8, 11, 13, and 17 under 35 U.S.C. § 103 as being unpatentable over Reshef and Perlman as applied to claims 1, 5, 10, and 14 respectively above, in view of Catiller et al. (U.S. 4,428,043) hereinafter referred to as Catiller. This rejection is respectfully traversed.

Claims 2, 4, 11 and 13 are dependent claims depending from amended independent claims 1 and 10. As was discussed above, neither Reshef, Perlman nor the combination of Reshef in view of Perlman teaches the features of amended independent claims 1 and 10. Catiller does not cure the deficiencies of the combination of Reshef in view of Perlman. Catiller still does not teach all the claim limitations in claims 1 and 10, including "preposting command buffers to an InfiniBand isolation bridge, wherein the buffers contain external small computer system interface commands;" "receiving a command from the InfiniBand host system;" "translating the command from an InfinBand host system command to a command for the device

with an internal InfiniBand bus structure to form a translated command, and sending the translated command to the device with an internal InfiniBand bus structure;" and "performing the translated command." Claims 1 and 10 are directed towards facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure. Claims 1 and 10 utilize an InfiniBand isolation bridge. Catiller does not teach an InfiniBand host system or a device with an internal InfiniBand bus structure, an InfiniBand isolation bridge, or facilitating communication between the InfiniBand host system and the device with an internal InfiniBand bus structure. Instead, Catiller teaches forming a network support processor to execute data transfer for up to four main computers.

Claims 8 and 17 are dependent claims depending from amended independent claims 5 and 14. As was discussed above, neither Reshef, Perlman nor the combination of Reshef in view of Perlman teaches the features of amended independent claims 5 and 14. Catiller does not cure the deficiencies of the combination of Reshef in view of Perlman. Catiller still does not teach all the claim limitations in claims 5 and 14, including "initiating a translation mapping to an InfiniBand translation bridge, wherein the translation mapping associates external command addresses with the device with an internal InfiniBand bus structure;" "receiving a command from the InfiniBand host system;" "translating a destination local identifier of the command to a destination local identifier for the device with an internal InfiniBand bus structure to form a translated address and sending the command to the device with an internal InfiniBand bus structure associated with the translated address, as determined by the translation mapping;" and "performing the command." Claims 5 and 14 are directed towards facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure. Claims 5 and 14 utilize an InfiniBand translation bridge. Catiller does not teach an InfiniBand host system, a device with an internal InfiniBand bus structure, an InfiniBand translation bridge, or facilitating communication between the InfiniBand host system and the device with an internal InfiniBand bus structure. Instead, Catiller teaches forming a network support processor to execute data transfer for up to four main computers.

Therefore, for the reasons set forth above, Applicants submit that the combination of Reshef in view of Perlman and further in view of Catiller do not teach all the features of amended independent claims 1, 5, 10, and 14. Thus, at least by their virtue of depending from allowable claims, Applicants submit the dependent claims 2, 4, 8, 11, 13, and 17 are also

allowable over the combination of Reshef in view of Perlman and further in view of Catiller.

Furthermore, claims 2 and 11 recite other additional combinations of features not suggested by the combination of the references. Claims 2 and 11 recite the feature of "sending a command completed message to the InfiniBand host system, wherein the message appears to originate from the InfiniBand isolation bridge." Such a feature is not taught or suggested by the combination of Reshef in view of Perlman further in view of Catiller. As discussed above, neither Reshef, Perlman, Catiller, nor the combination of Reshef in view of Perlman further in view of Catiller teaches an InfiniBand translation bridge. As such, it follows that neither Reshef, Perlman, Catiller, nor the combination of Reshef in view of Perlman further in view of Catiller teaches or suggests the feature of "sending a command completed message to the InfiniBand host system, wherein the message appears to originate from the InfiniBand isolation bridge."

Therefore, for the reasons set forth above, Applicants submit that the combination of Reshef in view of Perlman and further in view of Catiller do not teach all the features of amended independent claims 1, 5, 10, and 14. Thus, at least by their virtue of depending from allowable claims, Applicants submit the dependent claims 2, 4, 8, 11, 13, and 17 are also allowable over the combination of Reshef in view of Perlman and further in view of Catiller.

Therefore, the rejection of claims 2, 4, 8, 11, 13, and 17 under 35 U.S.C. § 103 has been overcome.

IV. 35 U.S.C. § 103, Obviousness

The Office Acion has rejected claims 3, 9, 12, and 18 under 35 U.S.C. § 103 as being unpatentable over Reshef and Perlman as applied to claims 1, 5, 10, and 14 respectively above, in view of Catiller and Nielson et al. (U.S. 5,619,642) hereinafter referred to as Nielson. This rejection is respectfully traversed.

Dependent claims 3, 9, 12, and 18 depend from amended independent claims 1, 5, 10, and 14, respectively. As was discussed above, the combination of Reshef in view of Perlman further in view of Catiller fail to teach the features recited in claims 1, 5, 10, and 14. Nielson does not cure the deficiencies of the combination of Reshef in view of Perlman further in view of Catiller. Nielson does not teach the features from the combination of Reshef in view of Perlman further in view of Catiller for claims 1 and 10 including "preposting command buffers to an InfiniBand isolation bridge, wherein the buffers contain external small computer system interface commands;" "receiving a command from the InfiniBand host system;" "translating the command

from an InfinBand host system command to a command for the device with an internal InfiniBand bus structure to form a translated command, and sending the translated command to the device with an internal InfiniBand bus structure;" and "performing the translated command." Claims 1 and 10 are directed towards facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure. Claims 1 and 10 utilize an InfiniBand isolation bridge. Nielson does not teach an InfiniBand host system or a device with an internal InfiniBand bus structure, an InfiniBand isolation bridge, or facilitating communication between the InfiniBand host system and the device with an internal InfiniBand bus structure. Instead, Nielson teaches a fault tolerant memory system.

Additionally, Nielson does not teach the features from the combination of Reshef in view of Perlman further in view of Catiller for claims 5 and 14 including "initiating a translation mapping to an InfiniBand translation bridge, wherein the translation mapping associates external command addresses with the device with an internal InfiniBand bus structure;" "receiving a command from the InfiniBand host system;" "translating a destination local identifier of the command to a destination local identifier for the device with an internal InfiniBand bus structure to form a translated address and sending the command to the device with an internal InfiniBand bus structure associated with the translated address, as determined by the translation mapping;" and "performing the command." Claims 5 and 14 are directed towards facilitating communication between an InfiniBand host system and a device with an internal InfiniBand bus structure. Claims 5 and 14 utilize an InfiniBand translation bridge. Nielson does not teach an InfiniBand host system, a device with an internal InfiniBand bus structure, an InfiniBand translation bridge, or facilitating communication between the InfiniBand host system and the device with an internal InfiniBand bus structure. Instead, Nielson teaches a fault tolerant memory system.

Therefore, for the reasons set forth above, Applicants submit that the combination of Reshef in view of Perlman further in view of Catiller and further in view of Nielson do not teach all the features of amended independent claims 1, 5, 10, and 14. Thus, at least by their virtue of depending from allowable claims, Applicants submit the dependent claims 3, 9, 12, and 18 are also allowable over the combination of Reshef in view of Perlman further in view of Catiller and further in view of Nielson.

Therefore, the rejection of claims 3, 9, 12, and 18 under 35 U.S.C. § 103 has been overcome.

V. 35 U.S.C. § 103, Obviousness

The Office Acion has rejected claims 6 and 15 under 35 U.S.C. § 103 as being unpatentable over Reshef and Perlman as applied to claims 5 and 14 respectively above, in view of Nielson. This rejection is respectfully traversed.

As discussed above, Nielson does not cure the defects of Reshef in view of Perlman further in view of Catiller in regards to amended independent claims 5 and 14. As such, Nielson does not cure the deficiencies of the combination of Reshef in view of Perlman in regards to amended independent claims 5 and 14. Therefore, as claims 6 and 15 are dependent claims depending from amended independent claim 5 and 14, Applicants submit that at least by their virtue of depending from allowable claims, dependent claims 6 and 15 are also allowable.

Therefore, the rejection of claims 6 and 15 under 35 U.S.C. § 103 has been overcome.

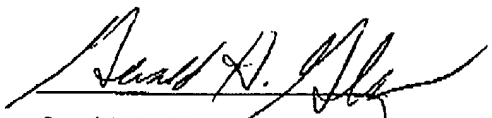
VI. Conclusion

It is respectfully urged that the subject application is patentable over the above cited references and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: January 18, 2006

Respectfully submitted,



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